EFFECT OF YOGIC INTERVENTION ON SELECTED PSYCHOLOGICAL AND PSYCHOMOTOR VARIABLES AMONG SPORTS PERSONS

Synopsis

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Certificate

I hereby declare that the synopsis "**EFFECT OF YOGIC INTERVENTION ON SELECTED PSYCHOLOGICAL AND PSYCHOMOTOR VARIABLES AMONG SPORTS PERSONS"** being submitted in partial fulfillment of the requirement for the degree of Doctor of Philosophy in Yoga under the Department of Yogic Sciences, LNIPE, Gwalior during the academic year 2021-22.

It is a bonafide record of original work carried out under the supervision of Dr. Megha Sahu and the co-supervision of Dr. Suresh Lal Baranwal has not been submitted in full or part to any other university or institute for a degree or diploma. Further, it is certified that the synopsis is plagiarism free and the proof has been submitted.

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ABSTRACT

This study explores the impact of yogic intervention on selected psychological and psychomotor variables among sports persons. With the increasing pressure in competitive sports, athletes often face heightened psychological stress, which can negatively affect their performance. Psychological constructs such as self-efficacy, personality hardiness, and stress coping skills, along with psychomotor variables like reaction time and dynamic balance, are crucial in determining athletic success. Despite existing literature highlighting the positive effects of yoga on mental and physical health, limited studies have specifically assessed its impact on athletes' psychological resilience and motor efficiency.

The present research adopts an experimental design using a pre-test and post-test control group method, with 60 state-level individual sports participants divided equally into control and experimental groups. The experimental group underwent a 10-12 weeks yoga-based intervention involving asanas, pranayama, and meditation, conducted five days a week for 40 minutes per session.

The findings are expected to support the inclusion of yoga as a holistic performance-enhancing and mental health-promoting tool in sports training programs.

Key Words - Yoga Intervention, Sports Persons, Self-efficacy, Hardiness, Stress, Balance

CHAPTER I

INRODUCTION

In the last few decades, sports psychology has become an important part of sports. Sports psychology is the study of how psychological factors influence sports, athletic performance, exercise, and physical activity. One of the applications of sports psychology is to help improve sports persons' (athletes') performance by enabling them to learn new skills and execute them efficiently, using different techniques such as mental training, self-confidence, and self-efficacy.

In professional sports, increasing demands for victory and high-level goals are among the prevalent reasons that lead to psychological stress. Stress is one of the major factors that affect the behaviour and performance of athletes. However, it seems that the effect of stress on performance depends on individual differences among athletes. Players or coaches manage stressful and adverse situations very differently. Those who manage more stressful and difficult situations have more personality hardiness against mental and emotional issues and possess higher self-efficacy in them.

Providing psychological support and developing psycho-training programs for sports persons is always a necessity for this population so that their resilience to mental or emotional problems may increase enough to overcome these problems and their performance may increase.

Psychomotor skill (doing) - excellence in sport requires the execution of precise, fluent and effective movement patterns, which need the combination of perceptual and motor skills. These skills help the players in three ways: -

- The stimulation, in which the player develops the ability to think through the central nervous system, thereby enabling the player to have a greater reaction speed.
- The variability that the athlete will have in the execution of the different movements.
- The motor development that the player will have both at the level of gestural speed, reaction and execution.

Self-Efficacy

The concept of self-efficacy came into popularity after Albert Bandura published his article in Psychological Review titled "Self-Efficacy: Towards a Unifying Theory of Behavior Change" in 1977[1]. The importance and popularity of the concept of self-efficacy have reached the point that it has become one of the most studied positive psychological concepts (Bandura, 1977,1982, 1997) [2] .

The core idea behind the concept of self-efficacy is that it is the belief that one can accomplish what one wants (writer). The self-efficacy of an individual reflects his/her confidence in his/her abilities to regulate behaviors, motivation, and social environment. The cognitive self-evaluations about oneself influence the whole life viz. life goals, goal-directed behaviors, expectancy to perform required behaviors to achieve desired goals.

Bandura has defined the term self-efficacy as "peoples' beliefs in their capabilities to produce desired effects by their actions" (Bandura, 1977) [3]. Self-efficacy is one's belief in his or her capabilities to organize and execute the required courses of action to achieve desired goals. In the same manner, Maddux has conceptualized self-efficacy as "what I believe I can do with my skills under certain conditions" [4]. According to Bandura, self-efficacious beliefs influence how we think, behave, and feel (Bandura). (1) Self-efficacy influences every aspect of our life; psychological, physiological, behavioral, and motivational. (2) It determines what goals one chooses, how one will go to achieve those goals, and how one reacts to his or her performances.

Personality Hardiness

The term hardiness is known as the resistant behavior of an individual against stressful behavior. In the early days of hardiness research, it was commonly defined as a psychological structure made up of the three associated general dispositions of commitment, control, and challenge that serves as a source of resistance in stressful situations. [5] The commitment disposition was defined as a proclivity to engage in life activities and a genuine interest in and curiosity about the environment (activities, things, other people). The control disposition was defined as a predisposition to believe and act as though one can exert control over the events unfolding around oneself by one's own efforts. Finally, the challenge disposition was described as the view that change is the normal manner of life and that it provides stimulating chances for personal progress rather than stability. Hardiness appears to confer resiliency through a combination of cognitive, behavioral, and biophysical mechanisms.

Stress coping Skill

Stress has always been considered as the biggest challenge in any work field. Coping usually involves adjusting to or tolerating negative events or realities while you try to keep your positive self-image and emotional equilibrium. Coping occurs in the context of life changes that are perceived to be stressful. Coping involves adjusting to unusual

demands, or stressors. This requires making a greater effort and using greater energy than what's needed in the daily routines of life.

Reaction Time

Reaction time (RT) is a measure of the response to a stimulus. RT plays a very important role in our lives as its practical implications may be of great consequence. Factors that can affect the average human RT include age, sex, left or right hand, central versus peripheral vision, practice, fatigue, fasting, breathing cycle, personality types, exercise, and intelligence of the subject.

Dynamic Balance

Dynamic balance is the ability to maintain postural stability and orientation with centre of mass over the base of support while the body parts are in motion in other words it is the ability to remain standing and stable while performing movements or actions that require displacing or moving oneself.

Yoga

Yoga is a wonderful gift from the ancient Indian stream of knowledge to mankind. In his famous text, Patanjali Yoga sutra Maharshi Patanjali has defined “Yoga as cessation of mind wandering” (Yogasutra).[6] The word Yoga has been derived from the Sanskrit root word “Yuj” which means - “to join”. Joining or merging oneself to the supreme is all about yoga. There are various ways through which one can experience this unity. In Shrimad Bhagvadgeeta Lord Shri Krishna has asked about the major ways/paths – Karma yoga, Gyana yoga, and Bhakti yoga. Swami Vivekananda says that “the reflection of the moon on the ocean is blurred by the waves, so is the reflection of the Self or Atman, broken by the waves of mind” (Shivom & Verma, 2020).[7] So, when the mind becomes absolute calm, one can experience one’s true self. This is the process of self-realization. The aim of all the paths of yoga is self-realization.

STATEMENT OF THE PROBLEM

The statement of the problem is stated as **"A STUDY OF EFFECT OF YOGIC INTERVENTION ON SELECTED PSYCHOLOGICAL AND PSYCHOMOTOR VARIABLES AMONG SPORTS PERSONS"**

OBJECTIVES OF THE STUDY

- To assess the effect of yoga intervention on personality hardiness among sports persons.
- To assess the effect of yoga intervention on self-efficacy among sports persons.
- To assess the effect of yoga intervention on stress coping skills among sports persons.
- To assess the effect of yoga intervention on reaction time among sports persons.
- To assess the effect of yoga intervention on dynamic balance among sports persons.

DELIMITATION

- Study will be delimited to individual sports.
- The age of the sports persons will be in the age group of 18-28 years.
- Both male and female sports persons will be the part of the study.
- Sports persons who have participated in any sports for at least district or state level and practice regularly to go higher.
- Sports persons having no current injury would be part of the study.
- Sports persons who do not practice yoga themselves.

- This study will be delimited to following variables: -
  - Self-efficacy
  - Personality hardiness
  - Stress Coping skill
  - Reaction time
  - Dynamic balance

HYPOTHESIS

- There is no significant effect of intervention plan based on yogic techniques on personality hardiness.
- There is no significant effect of intervention plan based on yogic techniques on self- efficacy.
- There would be no significant effect of intervention plan based on yogic techniques on stress coping skill.
- There would be no significant effect of intervention plan based on yogic techniques on reaction time.
- There would be no significant effect of intervention plan based on yogic techniques on dynamic balance.

SIGNIFICANCE OF STUDY

Research has shown that sport has a close relationship with mental health, especially the prevention of psychological anomalies. In fact, sport is important in many aspects of social, cultural, political, economic and health. In the last few decades, sports psychology has become an important part of sport. One of the applications of psychology in sport is to help improve performance, to learn and to execute more correctly and more easily the skills, using various techniques such as mental training, self-esteem, and self-efficacy. Admittedly, these psychosocial skills are the main and most prominent components of ongoing performance at high levels of competition.

Also, psychomotor skills like reaction time and dynamic balance play a very crucial role for any sport. The reaction time affects the performances of any sports person. It's also been seen by several researchers that reaction time has a direct effect on sports performance and when we talk about body balance or dynamic balance- it is required for each and every movement for all. Dynamic balance refers to the ability to move outside of the body's base of support; while maintaining postural control; yoga has also shown a positive effect on psychomotor skill in normal population.

Also, various research has shown the role of self-efficacy, hardiness and stress coping ability in the success of a sports person, but there is a marked lack of yoga intervention programs to enhance these variables among sports persons. Through the present study I want to fill the void and will study the effect of an intervention program based on yoga to enhance the above mentioned psychological and psychomotor variables among sports persons.

CHAPTER II

LITERATURE REVIEW

Self-Efficacy

- Ercis (2018) studied mental skills of elite and non-elite athletes. He found self-confidence of elite athletes is so higher than non-elite athletes. Journal of Education and Training Studies Vol. 6, No. 12a; December 2018 76. [8]
- Rasmusen (2016) conducted research on the effect of mediator of sport self-efficacy on the relationship between perfectionism and competitive anxiety. The results showed that attempts to complete (positive perfectionism) with cognitive and physical anxiety of athletes were negative and trustworthy. They have a positive correlation. Negative reaction to incompleteness (negative perfectionism), on the contrary, was positively correlated with cognitive and physical anxiety of athletes and their self-confidence. Analysis of these results showed that sport self-efficacy has a mediator effect on the relationship between the positive and negative dimensions of perfectionism with competitive anxiety. [9]

Personality Hardiness

- SR Maddy and MJ Hess have found a positive relationship between personality hardiness and basketball performance.[10]
- Psychologically, Kosaba(1979) found that hardiness is a buffer of the association between stress and illness. Ostensibly, hardiness entails maximizing existing circumstances and minimizing difficulties (Vance, Struzick, & Masten, 2008) [11]
- Hardiness is associated with psychological, social, and physiological well-being. (Vance, Struzick, & Masten. 2008).[12]

Stress Coping Skill

- By giving a yoga intervention to students Lemay, John and Buchanan in 2019 found that there was a positive effect on stress, i.e., their stress level

was reduced.[13]

- Gaura and Taylor, in their research work Yoga for stress reduction and injury prevention at work, 2002, found that by doing yoga people learn better to deal with stressful situation.[14]
-

Reaction Time

- In 2015 a research work by Purohit, Pradhan and Nagendra showed a positive effect on psychomotor skill of Orphan adolescent children.[15]
- There's a significant effect of yoga on psychomotor variables of basketball players, B Sangeetha and A Pushparajan.[16]

Dynamic Balance

- Singh, V., Bhutia, T., Singh, M., & Krishna, N. (2022) found a significant increase in dynamic body balance in players through Hatha Vinyasa Practice. [17]
- In 2021, Bintari, Anita and SS in their research work on "The Effect of Hatha Yoga and Surya Namaskar on Flexibility and Balance in Women", found that there has been significant increased effect on Body Balance of the practitioners.[18]

Yoga

- *Asanas, pranayama, dharana* and *dhyana* have tremendous physical, mental as well as spiritual benefits. Asanas are truly effective in reducing and curing physical and mental problems and improving physical as well as mental strength. Anand and team conducted a study on nursing students to examine the effects of *yogic asanas* on anxiety level and general wellbeing.[19] He found that the practice of yogic asanas reduced the level of anxiety and improved general wellbeing.
- Study at British University revealed that the practice of *asanas* enhances individual's emotional well-being and resilience to stress (Hartfiel, 2011).[20]
- Gupta et al, 2010 did research to examine the effects of *pranayama* (*Anuloma-Viloma Pranayama)* among aged.[21] They reported that practicing pranayama is extremely beneficial in treating depression and

improving autonomic functions.

- Umadevi et al in 2013 conducted a study to examine the effects of pranayama on depression and quality of life among caregivers of in-patient at a tertiary care centre in India. They found that the practice of *pranayama* significantly reduces the level of depression and improves quality of life. Bora, 2013 in his study found that different forms of pranayama work effectively to cure depression.
- Chand in his study on parents of differently abled children in 2020 found that *Dhyana* (meditation) is highly effective in reducing anxiety symptoms. A technique which is based on the principles of yoga, named Mindfulness is also truly effective in achieving mental health.
- According to a study conducted by Serpa in 2014 among veterans, it was found that by practicing Mindfulness-based Stress Reduction (MBSR) technique reduces anxiety, depression, and suicidal ideation.[22] Numerous research has been conducted to examine the efficacy of yogic techniques on mental health. These all indicated that yogic techniques are very effective in treating mental disorders and in improving quality of life.

CHAPTER III

PROCEDURE

Selection of the subject

Any sports person of individual games who is practicing regularly and has played at least at state level tournament.

Sample size

Sample size would be 60, which is further divided into two equal groups; the experimental and the control group each consists of 30 participants.

Sampling method

After defining the sample based on inclusion and exclusion criteria, samples will be selected by using a *random sampling* method.

Variables selected for the present study

Variables chosen for the study are given below:

- **Independent Variables:**

  - An intervention based on yogic techniques.

- **Dependent Variables:**

  - Self-Efficacy
  - Personality Hardiness
  - Stress Coping skill
  - Reaction time
  - Dynamic Balance

Research design

The study is designed to assess the efficacy of the intervention program which will be based on yogic techniques on self-efficacy, personality hardiness, stress coping skill, reaction time and movement speed in sports persons. The research will be based on the experimental method, which adopts a pre-test – post-test control group design. Pre-test – post-test control group design is a type of experimental design where test units are randomly allocated to an experimental and a control group. Both groups are measured before and after the experimental group is exposed to a treatment condition.

Assessment tools

Self-efficacy scale:

The Self-Efficacy Scale (SES), developed by Dhar and Dhar, was used to assess self-efficacy. Initially, twelve components were identified through first-order factor analysis: proficiency, persuasion, perseverance, self-confidence, commitment, capability, governance, progression, diligence, conviction, self-appraisal, and self-assurance. These were later grouped into six broader dimensions—credibility, assertiveness, endurance, progression, self-confidence, and commitment—using second-order factor analysis.

The SES includes 35 items formatted on a Likert scale. It demonstrates strong reliability, with a coefficient of 0.86, and exhibits both high face validity and excellent content validity, the latter rated at 0.93.

Hardiness scale:

Hardiness will be assessed using the Hardiness scale by Arun Kumar Singh. This scale consists of 30 items in three components- I. commitment, II. Control, III. Challenge.

Stress Coping Strategies Scale:

Stress Coping Skill will be measured by Stress Coping Strategies Scale given by Manish Sharma and Surbhi Sharma. This scale consists of 39 items divided into six dimensions-

I. Avoidance, II. Diet Control, III. Psycho Medicinal Therapy, IV. Most Liked

Activities,

V. Outer Wall Strategy, and VI. Reducing Physical Stress.

Ruler Drop Test:

This test uses the gravitational force properties to determine the time taken by a person to respond to the dropping scale by measuring how far the scale can fall before being caught by the examinee. The material required for this test are 1. Ruler 2. Assistant

Formula used to measure the reaction time is $\mathbf{t = \sqrt{2d/a}}$

Beam Balance Test:

This is a simple test of dynamic balance requiring the subject to walk along an elevated beam, with subjective measures of their balance performance. Based on the performance, scores are given on a 5-point scale.

Intervention Program:

The intervention program will be based on yogic principles and techniques. The participants will be given intervention five days a week for 10-12 weeks either in the morning or in the evening. The duration of the intervention will be 40mins each day. The intervention program will be comprised of the following set of techniques. These are:

Warmups

Surya Namaskara-

- 4-6 rounds

Asanas based on spinal movements-

- Lateral (left & right)
- Forward
- Backward
- Twisting
- Inversion

Pranayama-

- Anuloma-viloma pranayama (alternate nostril breathing)
- Bhramari Pranayama

Meditation (Dhyana)

Shanti-Path

STASTICAL TECHNIQUES

- **Dependent T-test** will be used to compare the mean score of selected psychological variables (Self efficacy, Personality hardiness and Stress coping Skill) and psychomotor variable (Reaction time and Dynamic Balance) of sports persons.
- **ANCOVA will be used** to compare the adjusted mean scores of Psychological Variables (Self efficacy, Personality Hardiness and Stress Coping Skill) and Psychomotor Variable (Reaction Time and Dynamic Balance) of Experimental and Control group of Sports persons by considering their pre-Psychological and Psychomotor Variables.
- **Descriptive Statistics will be used** to characterize the level of Psychological Variables (Self efficacy and Personality Hardiness) as well as of Psychomotor Variables (Reaction Time and Dynamic Balance) of Experimental and Control group of Sports persons.

EXPECTED OUTCOME

The expected outcome of this study is that the yogic intervention will lead to significant improvements in both psychological and psychomotor variables among athletes in the experimental group compared to the control group.

Overall, the study is expected to demonstrate that a structured yoga-based intervention can significantly enhance mental toughness and physical responsiveness, supporting its integration into regular sports training regimes. These outcomes would not only validate the use of yoga as a performance-enhancing modality but also underscore its role in promoting mental well-being among athletes.

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